

## Process Sheet

Date: Thursday, 14/09/2006 2:33:59 PM  
User: Linda Lacelle

Customer : CU-DAR001 Dart Helicopters Services  
Job Number : 23805  
Estimate Number : 10421  
P.O. Number : *N/A*  
This Issue : 14/09/2006 S.O. No. : *N/A*  
Prsht Rev. : NC  
First Issue : 14/11/2005 Type : LANDING GEAR  
Previous Run :  
Written By : *[Signature]*  
Checked & Approved By : *[Signature]*  
Comment : Est Rev: 05.06.10 Acid etch moved to Step 11 KJ/JLM

Drawing Name : AFT X-TUBE EXT HEIGHT GEAR  
Part Number : D205596103  
Drawing Number : D205-596-103 REV A  
Project Number : *N/A*  
Drawing Revision : A  
Material : *N/A*  
Due Date : 14/04/2006 Qty: 1 Um: Each

## Additional Product

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 DC DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Photocopy D205-594 bluefile &amp; type labels per PPP D205-596-103CHG001

2.0 D2890 Aft Crosstube



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty Part number Description Batch

1 D2890 Aft Crosstube

Batch

*B29479 DP 6-10-2**B1037788794 DP 6-10-2*

3.0 LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Bend D2890 as per Dwg D2890 and Folio F1002

4.0 QC6

DIMENSIONAL CHECK



Comment: DIMENSIONAL CHECK

5.0 LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Deburr and Polish

2-Mark 30.21" for cutting from tangential line in the straight section from D2890 as per Dwg wall template.

Date: Thursday, 14/09/2006 2:34:00 PM  
User: Linda Lacelle

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: AFT X-TUBE EXT HEIGHT GEAR

Job Number: 23805

Part Number: D205596103

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

QC6

DIMENSIONAL CHECK



Comment: DIMENSIONAL CHECK

Inspect dimensions. Conformity check and sign off by engineering.

07-01-24

7.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Cut as per Dwg D205-596-103

07-01-25

2-Deburr & Inspect for surface damage. Polish cut surface. Scribe part # and batch # on one end of tube.

07-02-25

8.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

07-01-25

9.0

HAND FINISHING 1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

07-01-31

10.0

SPRAY PAINTING

SPRAY PAINTING



Comment: SPRAY PAINTING

1-Prime inside and outside with Immron per QSI 005 4.2

07-04-12  
a.m 07/03/22

11.0

QC14

Inspect Spray Paint



Comment: Inspect Spray Paint

07-04-16

12.0

D2856600

Abrasion Strip



Comment: Qty.: 21.1890 f(s)/Unit —Total: 21.1890 f(s)

Pick:

Qty Part number

Description

Batch

2 D2856-600(10.090")

Abrasion Strip

26650

07-04-17

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Drawing Name: AFT X-TUBE EXT HEIGHT GEAR

Job Number: 23805

Part Number: D205596103

Job Number:



Seq. #:

Machine Or Operation:

Description :

13.0

D29401

Support



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Pick:

Qty Part number

Description

Batch

2 D2940-1

Support

25594

25 07-04-17

14.0

MS2192028

Clamp(per MIL-DTL-8783C)



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Pick:

Qty Part number

Description

Batch

4 MS21920-28

Clamp

102534

25 07-04-17

15.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

Install abrasion strips per QSI 035 position using DT8582. Install supports and clamps per Dwg

D205-596-103. Torque clamps to 80-100 in lb.

25 07-04-17

16.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

25 04-17 @

17.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D205-596-103

Location:

REV.F

C207104/18 @ SP

18.0

DC

DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Inspection Level 21

25 04-19 @

Job Completion



in 27-04-19

170  
→

5/34

<b>DART AEROSPACE LTD</b>	<b>Work Order:</b>	23805
<b>Description:</b> Aft Crosstube Extended Height Gear (-011)	<b>Part Number:</b>	D205-596-103
<b>Drawing:</b> D205-596-103 Rev. A	<b>Qty:</b>	1
		1
		Page 1 of 1

Step	Location	Procedure	By	Date	Qty																
1	DC	Issue Traveller <b>Dwg not required</b>	HJ	05.07.14	1																
2	DC	Photocopy D205-594 bluefile & type labels per PPP D205-596-103 <b>CHG001</b>																			
3	LG	Bend D2890 as per Dwg D2890 and Folio FT002 <b>Pick:</b> <table><tr><td><u>Qty</u></td><td><u>Part number</u></td><td><u>Description</u></td><td><u>Batch</u></td></tr><tr><td>1</td><td>D2890</td><td>Aft Crosstube</td><td></td></tr></table>	<u>Qty</u>	<u>Part number</u>	<u>Description</u>	<u>Batch</u>	1	D2890	Aft Crosstube												
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8	LG	Cut as per Dwg D205-596-103																			
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10	QC5	Inspect work to Step 9																			
11	FP	Acid etch and alodine inside and outside of tube as per QSI 005 4.1																			
12	FP	Prime inside and outside with Immron per QSI 005 4.2	am	06-01-06	1																
13	QC14	Inspect Spray paint																			
14	LG	Install abrasion strips per QSI 035 position using DT8582. Install supports and clamps per Dwg D205-596-103. Torque clamps to 80-100 in lb. <b>Pick:</b> <table><tr><td><u>Qty</u></td><td><u>Part number</u></td><td><u>Description</u></td><td><u>Batch</u></td></tr><tr><td>2</td><td>D2856-600-1009</td><td>Abrasion Strip</td><td></td></tr><tr><td>2</td><td>D2940-1</td><td>Support</td><td></td></tr><tr><td>4</td><td>MS21920-28</td><td>Clamp</td><td></td></tr></table>	<u>Qty</u>	<u>Part number</u>	<u>Description</u>	<u>Batch</u>	2	D2856-600-1009	Abrasion Strip		2	D2940-1	Support		4	MS21920-28	Clamp				
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15	QC5	Inspect work to Step 14																			
16	PK	Identify and pack for shipping as per PPP D205-596-103																			
17	AC	Cost / Part: _____																			
18	DC	Close W/O Inspect level 21																			

Rev	Date	Change	Revised by	Approved
A	00.11.22	New Issue	EC	
B	01.11.29	Added Inspection Level 21	SM	
C	02.02.05	Re-format	NG	
D	02.11.08	Re-format; D2890 was D6008-180	KJ	
E	02.12.11	Modified Steps 4 and 12	KJ/RF	
F	05.03.21	Added bending procedure	KJ/JLM	
G	05.06.10	Acid etch moved to Step 11	KJ/JLM	

RELEASED  
2005-06-17

PROS

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Mfg / Design Mgr	Approval QC Inspector
06-10-02	3; 4	Steps 3 & 4 are not required, bending done on 2890 w/o. Removed p.e.m. change		06-10-02			

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Design Mgr	Approval QC Inspector
			Initial Design Mgr	Action Description Design Mgr	Sign & Date			

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

NOTE: Date &amp; initial all entries

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

# Job Costing Report

Dart Aerospace Ltd.  
Hawkesbury

Jul 14, 2005  
01:31 pm

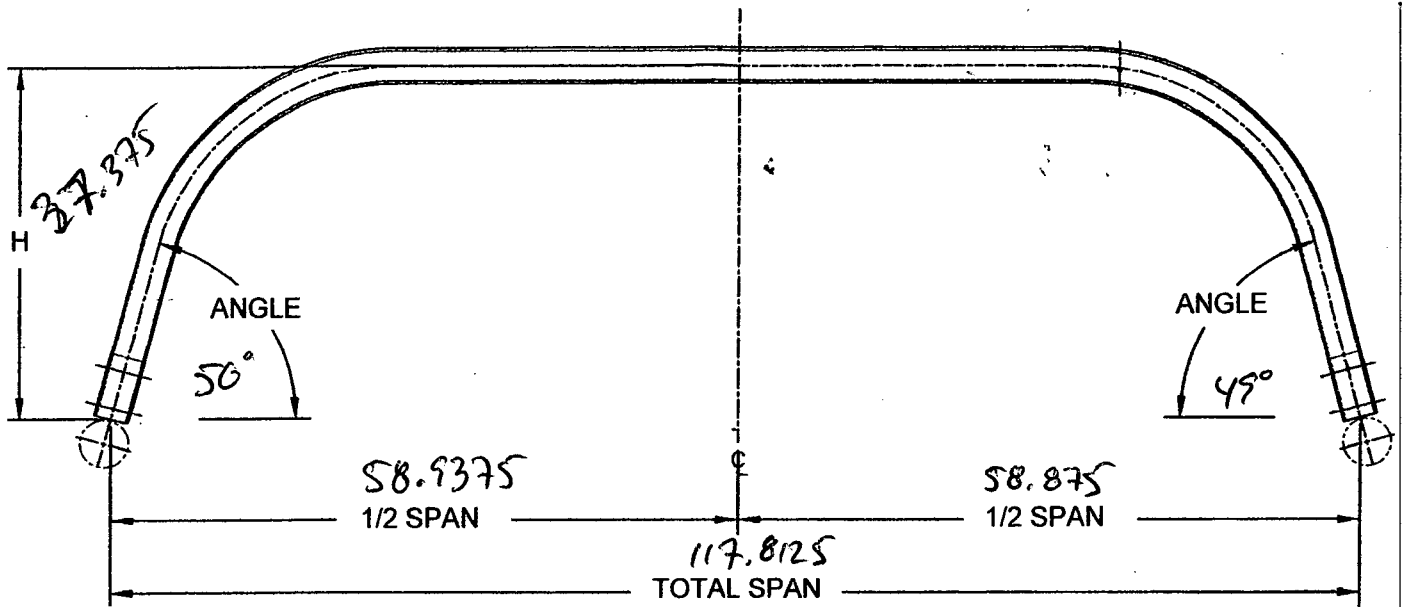
Work Order No : 0023805  
Project Name : D205-596-103  
Project For : WK534  
Work Order Type : Main  
Main WO Number :  
House Part Number : \*D205-596-103  
Description : Crosstube Aft Extended  
Manufactured : Yes  
Amount Req'd : 1  
Amount Done : 0  
Start Date : 07-14-05  
Est Finish Date : 08-20-05  
Act Finish Date :  
Drawings Req'd : No  
Ok for Approval :  
Approval Rec'd :

Department Code:  
Burden Flags : NNNNNNNN  
WO Status : Open  
Invoice State : Not Invoiced  
Invoice Date :  
Invoice Number :  
Invoice Amount : 0.00  
  
Order Entry No :  
OE Value : 0.00  
  
Est Mark Up : 0.000%  
Actual Mark Up : 0.000%  
  
\$0 Posted to Finished Goods

	Estimated	Actual	Var. %	Posted	To Post
Material Cost	0.00	0.00	0.00	0.00	0.00
Engineering Hours	0.00	0.00	0.00		
Engineering Cost	0.00	0.00	-0.00	0.00	0.00
Production Hours	0.00	0.00	0.00		
Production Cost	0.00	0.00	0.00	0.00	0.00
Packaging Hours	0.00	0.00	0.00		
Packaging Cost	0.00	0.00	0.00	0.00	0.00
OverHead Hours	0.00	0.00	0.00		
OverHead Cost	0.00	0.00	0.00	0.00	0.00
CNC Hours	0.00	0.00	0.00		
CNC	0.00	0.00	0.00	0.00	0.00
Misc. Hours	0.00	0.00	0.00		
Misc.	0.00	0.00	0.00	0.00	0.00
Burden	0.00	0.00	0.00		
Total Cost	0.00	0.00	0.00		
Mark up	0.000	0.000			
Selling Cost	0.00	0.00			

	Estimated	Actual
Labour Hrs/Amount Done	0.00	0.00
Profits/(Loss)	0.00	0.00

# Crosstube Bend Dimension Sheet



PART NUMBER: 205-596-103

BATCH NUMBER: 23805

DRAWING: -103 REVISION: A

H: 37.3 }  $\pm .100$

1/2 SPAN: 58.8

TOTAL SPAN: 117.6

ANGLE: 50°  $\pm 2$

QC 15: [Signature]

DATE: 001206

QTY: 1

## Jason Murdoch

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**From:** David Shepherd [dshepherd@dartaero.com]  
**Sent:** Tuesday, January 23, 2007 12:57 PM  
**To:** 'Jason Murdoch'  
**Cc:** 'L Lacelle'; 'Dale Trepanier'; 'Susanne Sheldon'; 'Jean-Luc Menard'; 'Eric Charbonneau'; 'Bill Beckett'  
**Subject:** RE: need to know

Jason,

I talked to Dan Paquette about this the last time I was there.  
It is acceptable to me to REMOVE the Engineering approval of the cut height on the extra high gear crosstubes.

These are big money cuts and we put this check in place mainly due to a lack of confidence in the personnel involved in cutting them at the time.  
As anybody who has tried to cut these things knows, it is not necessarily black and white.

I think the personnel involved are now capable of taking responsibility for these cuts.

David

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**From:** Jason Murdoch [mailto:jmurdoch@dartaero.com]  
**Sent:** Monday, January 22, 2007 4:47 AM  
**To:** 'David Shepherd'  
**Cc:** 'L Lacelle'; 'Dale Trepanier'  
**Subject:** need to know

I was wondering if I was allowed to sign off on the 205 high gear x-tubes that need Eng. approval before being cut to height. I completed the dimension check, and signed that off, just the w/o says to have an Eng. sign. If I can inspect it, I should be able to sign for it?

[jmurdoch@dartaero.com](mailto:jmurdoch@dartaero.com)  
Q.C. COORDINATOR

--

No virus found in this incoming message.  
Checked by AVG Free Edition.  
Version: 7.1.410 / Virus Database: 268.17.3/642 - Release Date: 1/20/2007

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No virus found in this outgoing message.  
Checked by AVG Free Edition.  
Version: 7.1.410 / Virus Database: 268.17.4/644 - Release Date: 1/22/2007



5/34

<b>DART AEROSPACE LTD</b>		<b>Work Order:</b>	23805
<b>Description:</b> Aft Crosstube Extended Height Gear (-011)		<b>Part Number:</b>	D205-596-103
<b>Drawing:</b> D205-596-103 Rev. A		<b>Qty:</b>	1
			#
		Page 1 of 1	

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REFERENCE ONLY

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RELEASED  
14.05.06.17